1. (Currently Amended) A method for affecting thermoacoustic oscillations in a combustion system having at least one burner and at least one combustor, the method comprising:

measuring a signal correlating with the thermoacoustic oscillations in the combustion system;

subjecting the measured signal to a first phase shift;

generating a first driver signal for driving at least one acoustic source to produce an instantaneous acoustic excitation of the gas flow;

subjecting the measured signal to a second phase shift;

generating a second driver signal for driving at least one control valve to produce an instantaneous modulated injection of the fuel;

acoustically exciting a gas flow forming in the region of the burner with said at least one acoustic source based on said first driver signal;

modulating injection of fuel with said at least one control valve based on said second driver signal; and

coordinating the acoustic excitation of the gas flow and the modulated injection of the fuel to affect the same interference frequency of the thermoacoustic oscillations;

wherein the instantaneous acoustic excitation of the gas flow and the instantaneous modulated injection of the fuel are phase-coupled with said signal correlating with the thermoacoustic oscillations in the combustion system.

2. - 3. (**Cancelled**)

4. (Currently Amended) The method as claimed in claim 34, wherein the first phase shift has a value different from that of the second phase shift.

5. (Previously Presented) The method as claimed in Claim 1, wherein the acoustic excitation of the gas flow is performed upstream of the modulated injection of the fuel.

6. (Previously presented) The method as claimed in Claim 1, wherein the modulated injection of the fuel is performed in a shear layer forming in the gas flow.

7. (Previously presented) A device for affecting thermoacoustic oscillations in a combustion system comprising:

at least one burner and at least one combustor;

at least one acoustic source configured and arranged for producing acoustic excitation of a gas flow forming in the region of the burner;

the burner having at least one fuel supply device with at least one control valve for producing modulated injection of the fuel; and

a control system which drives the at least one acoustic source and the at least one control valve to affect the same interference frequency of the thermoacoustic oscillations.

8. (Previously presented) The device as claimed in claim 7, wherein

the control system comprises an input side, an output side, a first control path for the acoustic excitation of the gas flow, and a second control path for the modulated injection of the fuel;

the same signal correlating with the thermoacoustic oscillations supplied to both the first and second control paths on the input side and in parallel;

the two control paths each contain a time delay element for producing a phase shift;

on the output side, the first control path conducts a first driver signal to the acoustic source; and

on the output side, the second control path conducts a second driver signal to the control valve.

9. (Previously presented) The device as claimed in claim 8, wherein the first time delay element produces a phase shift different from that of the second time delay element.

10. (Previously presented) The device as claimed in Claim 7, wherein the at least one acoustic source is arranged upstream of a point at which the modulated injection of the fuel is performed.

11. (Previously Presented) The method as claimed in claim 6, wherein the modulated injection of the fuel is performed with less than the total quantity of fuel injected.

12. (Previously Presented) The method as claimed in claim 6, wherein the modulated injection of the fuel is performed with less than 20% of the total quantity of fuel injected.